

CLAIMS

1. A packaging system for packaging a plurality of individual articles into packs and for collecting together a plurality of packs into a packaged unit, the system including a first part where the individual articles are marked utilising a first marking means, a second part where the packs are marked utilising a second marking means, and a third part where the packaged unit is marked utilising a third marking means, and the first part including packing means for packing the articles into packs and first conveying means for moving the packs from the first part to the second part, and the second part including second conveying means for conveying the packs from the second to the third system part, and the third part including means to collect the plurality of packs into a packaging unit, wherein each of the first, second and third marking means, and the means for collecting the plurality of packs into a packaged unit are connected to a data bus by respective connecting means, there being a control means also connected to the data bus, the control means sending appropriately addressed data bus commands on the data bus to each of the connected components, the data bus commands all using a common computer protocol, and each of the connecting means of the connected components including means to translate data bus commands appropriate to that component into a command protocol which is read by the connected component which responds by performing a productive function, whereby the control means is able to control each of the connected components independent of command protocols recognised by the connected components.

2. A system according to claim 1 wherein at least one of the first and second conveying means is also connected to the data bus via connecting means which translate appropriately addressed data bus commands into command protocols to operate the conveyor(s).

3. A system according to claim 1 or claim 2 wherein each of the first, second and third marking means includes respectively at least one of a continuous-ink jet printer, a laser printer, a thermal transfer printer and a label printer.
4. A system according to claim 1 wherein the first part of the packaging system includes means to weigh the articles so that information marked on the individual articles by the first marking means is dependent upon the weight analysis.
5. A system according to claim 1 wherein the first part of the packaging system includes means to size the articles so that information marked on the individual articles by the first marking means is dependent upon the size analysis.
6. A system according to claim 1 wherein the first part of the packaging system includes means to count elements so that information marked on the individual articles by the first marking means is dependent upon the count analysis.
7. A system according to claim 1 wherein the third part means to collect the plurality of packs into a packaging unit includes a palletiser whereby the packaged unit is a collection of packs on a pallet.
8. A system according to claim 7 wherein the palletiser includes means to wrap the collected articles in a wrapping and means to apply labels printed by the third marking means to the wrapping.

9. A system according to claim 1 wherein the data bus is provided by connection cable so that the connected components are all physically connected together.

10. A system according to claim 9 wherein the data bus includes an RS485 or RS422 or Ethernet standard cable.

11. A system according to claim 1 wherein the data bus is virtual, with each of the connected components receiving transmitted data bus commands and being adapted to respond to and translate data bus commands appropriate to that component into command protocols.

12. A system according to claim 1 wherein the control means issues data bus commands in one of HTTP, TPC/IP, IPX, FCP protocol.

13. A system according to claim 1 wherein the control means includes a database of connected components so that command protocols appropriate to the functionality of the connected components are issued.